THE ROLE OF ATTACHMENT TO OBESITY AND PSYCHOPATHOLOGY

by

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DEDICATION

I dedicate this work to the clinically obese, who struggle with their weight, society's judgments, and with themselves. It is my hope that this work will enlighten treatment programs to the emotional components of obesity, so that we may better serve this population.

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CHAPTER 1

INTRODUCTION

Obesity and overweight[1] have reached epidemic proportions in the United States (WHO, 1988). According to the results from the 1999-2000 National Health and Nutrition Examination Survey (NHANES), an estimated 64.5 percent of U.S. adults are overweight (Flegal, Carroll, Ogden, & Johnson, 2002). This represents an increase of 8 percent from the NHANES survey of 1988-1994. Not only did more people become overweight, but there was also a significant increase in obesity and extreme obesity. The increase in the incidence of overweight occurred for men and women in all age groups, and for Caucasians, African Americans, and Mexican Americans (Flegal et al., 2002).

Obesity and overweight are serious public health problems (NIH/NHLBI, 1998). They are known risk factors for health problems and researchers have postulated that obesity associated health problems have effects as great as health problems from poverty, smoking, or problem drinking (Sturm & Wells, 2001). The 1988 study of the National Institute of Health (NIH) and the National Heart, Lung, and Blood Institute (NHLBI) reported that obesity and overweight

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[1] Obesity and overweight are classifications that are determined by an individual's body mass index (BMI). BMI is calculated by an individual's weight in pounds, divided by the square of the height in inches, multiplied by 703. Individuals with a BMI less than18.5 are classified as underweight, BMI of 18.5-24.9 as normal weight, BMI 25.0-29.9 as overweight, and BMI 30.0-34.99 as obese class 1, BMI 35-39.99 as obese class 2, and BMI 40 and above as morbid obesity. These classifications are defined by the World Health Organization

are repeatedly associated with increased health risks. These health risks include type 2 diabetes; heart disease; stroke; hypertension, gallbladder disease, osteoarthritis, sleep apnea; asthma; breathing problems; cancer; high blood cholesterol; complications of pregnancy; menstrual irregularities; hirsutism; stress incontinence; increased surgical risk; depression; social stigmatization; and poor body image. In addition to health risks for obese and overweight individuals, obesity has been associated with an increase in mortality rate (NIH/NHLBI, 1998). Obese individuals have a 50 to 100 percent increased risk of death from all causes compared to normal weight individuals (NIH/NHLBI, 1998). Life expectancies of Caucasian men between 20 and 30 years old with a BMI≥45 could be shortened by up to 13 years; Caucasian women shortened by up to 8 years of life; African American men shortened by up to 20 years of life; and African American women shortened by up to 5 years (Fontaine, Redden, Wang, Westfall, & Allison, 2003). Recent estimates suggest that 300,000 annual deaths per year in the United Stated are attributed to obesity (Allison, Fontaine, Manson, Stevens, & Van Itallie, 1999).

Researchers generally agree that obesity is a complex disease with multiple causes. Genes account for 25%-40% of the variance in BMI (Bouchard, 1994). They contribute to the individual differences in resting metabolic rate, weight response to overfeeding, fat distribution, and physique (Bouchard, 1994). Single genetic deficits resulting in genetic syndromes, such as Prader-Willi, have

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(WHO, 1998) and the National Institutes of Heath/National Heart, Lung, and Blood Institute (NIH/NHLBI, 1998).

also been found to be related to obesity; however such syndromes are rare (Bouchard, 1994). Genetic inheritance also plays a role in obesity. Several studies have found that BMI is moderately heritable, generally with correlations ranging from .20-.30, but correlations are higher within generations than they are between generations suggesting the importance of shared family experiences (Grilo & Pogue-Geile, 1991).

The development of obesity varies by demographic variables. Overweight and obesity are more prevalent in female ethnic minorities, than in female Caucasian populations (Sobal & Stuckard, 1989). Among men, Mexican Americans have a higher prevalence of obesity followed by Caucasian men and African American men, respectively. Factors that may explain these relationships include culturally influenced food preferences and reduced energy expenditures resulting from an increase in sedentary behavior (Wardle, Waller & Jarvis, 2002). Cultural factors have been found to play a role in that there are larger preferred body types among minority females than in Caucasian females (Flynn & Fitsgibbon, 1996). This relationship exists because some minority sub-populations may associate positive characteristics (e.g. power, wealth, and well-being) with heavier women.

Disparities in prevalence also exist based on socioeconomic status (SES) (Sobal & Stunkard, 1989). For all ethnic groups combined, women of low SES are 50% more likely to be obese than those with higher SES. However, in men low versus high SES among men show no differences in incidences of overweight. It has been hypothesized that the relationship between overweight

women and low SES exists because of fewer financial resources to buy healthy food and participate in leisure activities, and less access to education about healthy habits (Wardle, Waller, & Jarvis, 2002).

While research in genetics and demographic variables hold promise for targeting and treating some obese people, such research is unlikely to solve the national obesity epidemic (Wadden, Brownell, & Foster, 2002). According to the leading health organizations, the major determinants of body weight[2] are changes in our eating behaviors and activity habits (WHO, 1998; NIH/NHLBI, 1998). Historically, society's body weight and composition were relatively stable; (Flegel et al., 2002), however, changes in society have greatly increased the energy intake of the individual and have reduced the need to be physically active (WHO, 1998). Brownell and colleagues (Brownell, 1994; Horgen & Brownell, 1998; Wadden, Brownell, & Foster, 2002) have referred to these factors as the "toxic environment." Toxic environment refers to the fact our food supply is inundated with high fat and high calorie foods that are readily available (Brownell & Wadden, 1992). Examples of the toxic environment are fast food restaurants, larger meal sizes, highly processed foods in convent locations such as gas stations, the convenience of eating out, vending machines supplied with high calorie and high sugar options, and fast food franchises in school cafeterias (Foreyt & Goodrick, 1995; Brownell & Wadden, 1992). In addition to exposure to high fat and calorie foods, our society is engaging in less physical activity (WHO,

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[2] Body weight is maintained in a steady state by a balance between calorie intake and energy expenditure (WHO, 1998)

1998; Brownell & Wadden, 1992). Our society has many energy saving devices such as automobiles, elevators and escalators, computers, and electrical appliances, which result in using less physical energy (Brownell, 1994; Brownell & Wadden, 1992). Not only has society created many energy saving devices, but Americans are also exercising less. More than 60% of American adults do not obtain regular physical activity and 25% receive no exercise at all (U.S. Department of Health and Human Services, 2001). The barrage of energy dense food coupled with decreases in activity and exercise levels have resulted in obesity reaching epidemic proportions (WHO, 1998; Wadden, Brownell, & Foster, 2002).

Treatments for Obesity and Overweight

Current treatments for obesity are based on guidelines developed by a joint commission between the NIH/NHLBL (1998). These guidelines are based on systematic review of published scientific literature in MEDLINE from January 1980 to September 1997. Randomized controlled trial (RCT) studies (N = 394) were evaluated by a 24-member panel with 115 outside reviewers. The panel evaluated 6 modalities of treatment and established treatment guidelines for individuals based on BMI, risk of health complications, and motivation for treatment. Generally, less intensive approaches were recommended for lower BMIs and more aggressive treatments were recommended for higher BMIs; however, when less intensive interventions fail, more aggressive interventions were recommended. Interventions progressively include dietary therapy,

physical activity, combined therapy (dietary therapy and physical activity), behavior therapy, pharmacotherapy, and surgery.

The results from dietary therapy studies, which include low calorie diets (LCDs), very low calorie diets (VLCDs), and lower-fat diets, concluded that dietary therapies result in an average weight loss of 8% of initial body weight in 3-12 months, with VLCDs producing greater initial weight loss. The results from physical activity studies revealed strong evidence for modest weight loss. Combined studies of dietary therapy and physical activity produced greater weight loss than dietary therapy or physical activity alone. A review of studies on behavior therapy, when used in conjunction with dietary therapy and physical activity, provided additional benefits for losing weight in the short term (1 year). However, long-term follow up (3 to 5 years) revealed a return to baseline for the majority of subjects in the absence of continued intervention. A review of pharmacotherapy, which has often been studied in conjunction with dietary therapy, physical activity, and behavior modifications, revealed significant results when used for 6 months to 1 year; however, long-term effectiveness of pharmacotherapy is questionable. Studies investigating the effects of weight loss surgery revealed substantial weight loss. While the more aggressive therapies, pharmacotherapy and surgery, produce stronger results, they are only available for individuals with BMI≥30 for pharmacotherapy, and with BMI≥40 for surgery. In addition, these interventions are not without risks, such as side effects, complications, and even death. The commission concluded that while weight loss is achievable, our current interventions are not adequate, particularly for

individuals with BMI≤30. It has been estimated that 90-95% of individuals in this group who experience weight loss through dietary therapy, physical activity, behavior modification, and some medications will relapse (Legro, 2000). The commission recommended future research in etiology and treatment for overweight; in particular they recommended psychological research.

Aside from evidence-based therapies, most people who have tried to lose weight have used self-directed diet and exercise (Serdula, Collins, Willliamson, Pamuk, & Byers, 1993), but little is known about the effectiveness of such programs (Wadden & Osei, 2002). The majority of self-help programs (i.e. Overeaters Anonymous and Take Off the Pounds Sensibly) do not collect data. Therefore evaluation of the effectiveness of their programs cannot be measured (Wadden & Osei, 2002). Commercial programs, such as Weight Watchers have begun investigating the effectiveness of their programs, but results are modest. In a study by Heshka et al. (2000) patients who were assigned to Weight Watchers versus a control group lost 6% of initial weight in 6 months; however, long-term effectiveness was modest.

Psychosocial Variables in Obesity and Overweight

While much is known about the physical variables of obesity, much less is known about the psychological variables. In general, attitudes of non-obese children and adults toward those who are obese are prejudicial (Staffieri, 1967) and discriminatory (Allon, 1982). Prejudices have been well documented in the overweight population. In the classic work of Staffieri (1967), he observed that children as young as 6 years old held anti-fat attitudes, characterizing silhouettes

of overweight children as "lazy, dirty, stupid, ugly, cheats, and lies." (p. 103). These attitudes persist through adolescence and adulthood. College students rate obese people as less desirable for employment than ex-mental patients and ex-criminals (Venes, Krupka & Gerard, 1982). There is even evidence that health professionals such as physicians, nurses, and psychologists have negative attitudes toward obese people which impacts negatively on their treatment (Teachman & Brownell, 2001). These prejudices have resulted in discrimination. Obese persons are discriminated against in college admissions, in the job market, and in search for housing (Wadden, Wombell, Stunkard, & Anderson, 2002). In addition, obese individuals are less likely to be married, have lower household incomes, and have higher rates of poverty compared to those who are not obese (Friedman & Brownell, 1995). The prejudices and discriminations are so pervasive to this population, that the term "obesity" has been given the value of "master identity" in that it nullifies the usual effects of other attributes (Dehger & Hughes, 1991).

Given the injustices incurred by the overweight and obese populations, it seems logical to conclude that they suffer psychological distress; however the findings are mixed. First generation researchers concluded that obesity was not associated with general psychological problems, (Friedman & Brownell, 1995; Stunkard & Wadden, 1992; Wadden & Stunkard, 1985); however many of the studies used to draw these conclusions were flawed. These studies generally compared obese populations with non-obese populations, assuming that the obese population is a homogeneous group (Friedman & Brownell, 1995). Other

methodological flaws included measuring single variables, small samples sizes, and the use of inconsistent definitions of "overweight" and "obesity." As a result of the poor methodology, these studies obtained inconsistent findings which led some researchers to conclude there was no link between obesity and psychopathology (Friedman & Brownell, 1995; Wadden et al., 2002).

In second-generation studies, researchers addressed Friedman & Brownell's (1995) criticisms and found that obesity was significantly related to depression. In a nationally representative sample of 32,000 persons age 25-74, Istvan, Savela, and Weidner (1992) found a weak positive correlation between BMI and symptoms of depression in women, and strong positive correlations between BMI and depression in woman who smoked. They found no relationship between BMI and depression among men. A comparable study by Carpenter, Hasin, Allison, and Faith (2000) of a nationally representative sample of 40,000 persons found similar findings as the previous study, in that that the relationship between BMI and depression varied by sex. In their study, obese women were more likely to have experienced major depression in the past year, were 20% more likely to report suicidal ideations, and were 23% more likely to have made a suicide attempt in the past year than were average weight women. By contrast, inverse relationships were found for obese men. Obese men were significantly less likely to report a history of major depression, suicidal ideation, or suicide attempts in the past year than men of average weight. Carpenter et al. (2000) concluded that elevations in depressive symptoms for obese women occurred because they eat in response to negative emotions. The lack of

depressive symptoms was not addressed in men, but perhaps is due to denial of negative affectivity.

In addition to elevated levels of depression in women, binge eating is more prevalent in obese populations (8%) than in the general population (2-3%) (Grilo, 2002). Borderline personality disorder (BPD) is also more prevalent in female obese populations (7%) than in the general population (2%) of women (Sansone, Sansone, & Wiederman, 1996). Such elevated levels of psychopathology suggest that there are subgroups of pathology within the obese population. In contrast to population studies, individuals seeking treatment for weight reduction have consistent and elevated levels of psychopathology compared to obese individuals not seeking treatment for weight reduction (Friedman & Brownell, 1995; Stunkard & Wadden, 1992; Wadden & Stunkard, 1985). In this population 30% of the individuals met the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (1994) research criteria for binge eating disorder (BED) Binge eating, which is described by the DSM-IV (1994) as a loss of impulse control secondary to dysphoric mood, results in the consumption of an abnormally large amount of food. The binge reduces the dysphoric mood during the overeating. However, after overeating the individual reports feeling disgust, depression and guilt because of their behavior. Other related features of binge eating include dissociations during the binge, relationship difficulties, interpersonal sensitivity, and anxiety and depressive symptoms. Research has found that BED is related to an increased prevalence of many other disorders in

this population. In samples comparing individuals with vs. without BED, those with BED are at increased risk for depression (37-51% compared to 14-26% in controls), personality disorders (56% compared to 23% in controls), and substance abuse (31% compared to 9% in controls). (Williamson, Zucker, Martin, & Smeets, 2001).

As a result of investigating the differences within the clinical obese population, significant psychopathology has been found. However, there is little evidence available showing how these pathologies might be related to one another. Rather, theorists have focused on developing theories for BED, which do not explicitly address obesity or other co-morbid mental disorders associated with binge eating. The "escape from self-awareness" model hypothesized that binge eaters have to high standards that they are unable to meet, which results in experiencing negative affect (Heatherton & Baumeister, 1991). There is an inability to cope with the negative affect coupled with dissociative experiences and attention placed on the environment leading to disinhibition of eating. There is also the "trade off" hypothesis in which the pre-binge emotions are more aversive than post-binge emotions. Therefore, binge eating functions as a trade off to decrease negative affect (Williamson et al., 2001). Lastly, in the "dietary restraint model", individuals restrict calorie intake that leads to energy deprivation and increased internal cues to consume food. However research has not supported these hypotheses. Researchers have found that those with BED do not report restrictive eating and that binge eating occurs before the attempt to restrict caloric intake. What all theories support is a theory of disinhibition, which

likely plays a role in BED (Williamson et al., 2001), and possibly is related to other psychopathologies found in this population.

Borderline Pathology, Emotion Regulation, Attachment, and Obesity

Disinhibition is not only prevalent in BED, but also in BPD, the incidence of which is elevated in BED populations. Not only is disinhibition evident in both disorders, they both share other similarities. BED and BPD are more common in women than in men, typical onset is in early adulthood, and symptoms remit in later adulthood (APA, 1994). Interestingly, binging and borderline episodes are triggered by an inability to cope with depressive symptoms, particularly negative emotions, which are also elevated in this population (APA, 1994). During this period of emotional dysregulation, individuals with either disorder report a loss of control, dissociative feelings, and a need to engage in maladaptive coping behaviors that temporarily reduce dysphoric feelings. Examples of maladaptive behaviors for those with BED is consuming an abnormally large amount of food, and, for those with BPD, mutilating their body. In these maladaptive coping episodes, patients report reduction of symptoms in the episode, but increased symptomatology after the episode. As a result of such overlapping symptoms, co-morbidity between these disorders, as well as related disorders such as depression and substance abuse, is high. What ties these disorders together is an individual's inability to cope with negative affect resulting in maladaptive coping; however, theories have focused on the behavioral component, "disinhibition", rather that the "emotional component", the inability to regulate negative affect.

Theories incorporating emotions and dysregulated behavior are prevalent in the attachment literature and include a disinhibition component, but focus on an inability to regulate negative affect. In addition, anecdotal information from obese individuals has continuously reported that food is a source of comfort that helps them to cope in times of stress, anger, depression, and loneliness (Fabricatore & Wadden, 2003). Despite this declaration, research has focused on the behavioral problems of the clinically obese and not the underlying emotional problems. This is evident in the fact that no emotion-focused therapy is prescribed by the NIH for treatment of obesity.

A prevailing theory of coping with negative affect is "attachment theory", also known as the "emotional regulation theory" (Feeney & Noller, 1996). Attachment, which has been associated with depression and borderline personality (Adams, Bernat, & Luscher, 2001), focuses on an inability to regulate negative affect. If attachment is disturbed then the individual will display maladaptive coping behaviors. It appears that this theory could be applied to the clinical obese population because the disorders present in it, with the exception of BED, have been related to the inability to regulate emotions.

Attachment theory, originated by John Bowbly, (1969) indicates that early experiences with a primary caregiver shape a child's perceptions of self and his/her relationships with others. If a child is able to depend on a caregiver for security, affection, and care, a positive internal working model of self-worthiness and expectations of others is formed. As a result, the child will perceive himself or herself as being worthy of love and affection and approach future relationships

with confidence. If, however, the caregiver is lacking or inconsistent in providing love and affection, the child will not feel worthy of love, and will not develop trust in others. Over time, Bowlby (1980) theorized that children internalize their experience with caregivers such that early attachment relationships come to form a template for later relationships. Ainsworth and colleagues (1978) applied Bowlby's theory of attachment (1969) to children and reliably identified three types of attachment categories; "Secure", "Avoidant", and "Ambivalent " The theory of attachment was later applied to adult populations and a four-group model of adult attachment: "Secure", "Preoccupied", "Dismissive", and "Fearful" (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Current theories in attachment have conceptualized the four-group model of attachment in a two-dimensional scale. The dimensions are attachment anxiety and attachment avoidance, which have been measured with reliable and valid self-report scales (Brennan, Clark, & Shaver, 1998). These classification systems become activated in times of emotional distress and thus are often described as a theory of affect regulation (Kobak & Sceery, 1988; Mikulincer, Shaver & Pereg, 2003; Pereg & Mikulincer, 2004; Sroufe & Waters, 1977).

Adults who have "Secure" attachments display low anxiety and low avoidance and regulate their affect by acknowledging their distress without being overwhelmed (Brennan, Clark, & Shaver, 1998; Mikulincer & Florian, 1998; Pereg & Mikulincer, 2004). This occurs because "Secure" adults hold optimistic expectations about stress management and have a strong sense of self-efficacy and confidence in others' good intentions (Bartholomew & Horowitz 1991).

"Secure" individuals' confidence in their own skills leads them to open their cognitive schemas to threatening information, to revise erroneous beliefs, and to explore and tolerate distress-related cues (Milkulincer, 1997). In this way "Secure" persons can develop more flexible and constructive means to regulate their affect, which, in turn, facilitates adjustment and well being. When they are distressed, they turn to others for support and comfort (Mikulincer & Florian, 1995; Mikulincer, Shaver, & Pereg, 2002). In support of this view, "Secure" persons have been found to show better adjustment (Brennan & Shaver, 1995) and less negative affect (Mikulincer, Florian & Weller, 1993; Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004).

In contrast, "Insecurely" attached adults are unable to effectively cope with negative affect. Within "Insecure" attachment, three subcategories have been reliably identified: "Preoccupied", "Dismissive", and "Fearful" (Brennan, Clark, & Shaver, 1998; Feeney & Noller, 1996). "Preoccupied" adults display high anxiety and low avoidance, meaning that they are constantly aware of negative feelings and focus their attention on these feelings in a hyper-vigilant way (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). They show heightened expressions of fear and anger toward others in an attempt to win other's love by means of clinging and controlling behaviors. They rely on passive, ruminative ways of coping that exacerbates distress. "Dismissive" adults display low anxiety and high avoidance (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). They deny negative affect and emphasize the importance of achievement and

self-reliance. They escape from close relationships by minimizing emotional involvement, denying attachment needs, suppressing bad thoughts and emotions, inhibiting displays of expressions and rely on repressive-dissociative mechanisms (Shaver, Collins, & Clark, 1996). "Fearful" adults display high anxiety and high avoidance (Brennan, Clark, & Shaver, 1998; Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). They show restricted acknowledgement of negative feeling and restricted display of anger and distress. They desire intimacy, but lack trust in others and fear rejection; hence they avoid close relationships

Not surprisingly, attachment has been linked to many psychopathologies. In research about the etiology of BPD, disturbed parental bonding, particularly neglectful and overprotective responses to a child, have been associated with developing BPD (Adams, Bernat & Lusher, 2001). It was hypothesized that parents who fail to provide a supportive and protective environment do not allow their children to learn how to cope with negative affect. When confronted with negative affect they become emotionally dysregulated and attempt to minimize the dysregulation through impulsive behaviors such as drug abuse and self-injurious behaviors. Multiple studies have validated the relationship between BPD and "Preoccupied" attachment (Fonagy et. al, 1996; Patrick, Hobson, Castle, Howard, & Maughan, 1994; Jones, 1996). In research about the etiology of substance addiction, theorists have hypothesized that the addicted person has had a long history of rejection and uses drugs to alleviate the pain, anger, and ambivalence from relationships (Hofler, & Kooyman, 1996). Over time they cope

with negative affect by dismissing its source, interpersonal relationships, in order to prevent future rejection. As a result, "Dismissive" attachment has been found to be associated with substance abuse disorders (Jones, 1996). Depression has been found to be associated with "Preoccupied" attachment in women (Cole-Detke & Kobak, 1996). A model describing the relationship between "Preoccupied" attachment and depression indicates that these individuals are emotionally dysregulated in that they focus on the discrepancies between their desired and perceived selves (Carver & Scheider, 1981). They become "Preoccupied" with their own shortcomings, focus excessively on relationships, and fail to develop adaptive mechanisms to increase autonomy and competence (Cole-Detke & Kobak, 1996). "Secure" attachment has consistently been associated with lack of, or decreased levels of, psychopathology (Feeney & Noller, 1996; Cole-Detke & Kobak, 1996; Fonagy et al 1996).

The most prevalent disorders in the obese population could be explained by attachment theory. Carpenter et al. (2000) found that obese women were more likely to report depressive symptoms than non-obese women. In addition, obese men appeared to be psychologically healthier than non-obese men. Since women are more likely to be classified with "Preoccupied" attachment and men "Dismissive" attachment (Feeney & Noller, 1996), perhaps these findings primarily reflect attachment disorders and only secondarily reflect psychopathology. This would mean that attachment classification was moderating the relationship between BMI and pathology, which could also explain why depression varies by sex. A similar hypothesis could be generated

for BED. Gender appears to be an important variable in BED because researchers have found different co-morbid disorders associated with gender. Women with BED are significantly more likely to have co-morbid BPD than men (Spitzer et al., 1993), while men with BED are significantly more likely to manifest substance use disorders (Tanofsky, Wilfley, Spurrell, Welch & Brownell, 1997). Perhaps, these relationships can also be explained by attachment theory.

If attachment moderates the relationship between BMI and pathology, then psychological treatment, which focuses on affect regulation, might be warranted for the clinically obese population with co-morbid psychopathologies. Such a finding could also help explain why the majority of treatments for the obese population are ineffective, leading to new research that focuses on more comprehensive treatments for obesity which includes learning how to regulate affect. On a related topic, other research has found that the majority of current treatments for obesity are successful while the patient remains in the program, but fail when the program has ended (NIH/NHLBI, 1998). Perhaps it is the relationship between the treatment provider and the patient that accounts for the ability to maintain weight loss. This factor, the therapeutic alliance, could also be related to the theory of attachment in that a caregiver provides a "secure base" from which a patient can cope with emotions that might trigger binge eating, and over time, obesity. No known research in the treatment for obesity has measured the value of the therapeutic alliance. If attachment is found to be a factor in the obese population, perhaps treatment programs could translate these

findings into ways that provide value for the relationship between treatment provider and patient.

Purpose of study

The purpose of this study was to determine if an inability to regulate emotions is associated with psychopathology within a sample of the clinical obese population. In other words, an inability to cope with negative emotions may be correlated with elevated levels of depression, borderline personality, drug dependency, alcohol dependency, and binge eating.

I expect to find the following relationships in my research study:

A. Greater degrees of "Secure" attachment will be correlated with less psychopathology, a) depressive, b) dysythmic, c) major depression, d) borderline, e) drug dependency, f) alcohol dependency, and g) binge eating symptoms. Greater degrees of "Secure" attachment will also be associated with lower BMIs. In addition, BMI will be positively associated with psychopathology. Specifically, there will be higher rates of a) depressive, b) dysythmic, c) major depression, d) borderline, e) drug dependency, f) alcohol dependency, and g) binge eating symptoms among individuals with higher BMI.

B. The relationship of gender and age to attachment, BMI, and psychopathology will be explored. It is expected that women will more likely be categorized as "Preoccupied" attachment than men and men will more likely be categorized as "Dismissive" attachment than women. There is no preliminary hypothesis for the relationship between gender and BMI. It is expected that gender will vary within type of psychopathology. It is expected that women will

more likely have internalizing disorders, such as depression and anxiety, than men. It is expected that men will have significantly more substance dependence related disorders than women. There is no preliminary hypothesis of age in relationship to attachment, BMI, or psychopathology.

C. Attachment will moderate the relationship between BMI and psychopathology. It is expected that the relationship between BMI and psychopathology will be dependent on the level of attachment. Specifically obese adults with more "Secure" attachments will have less psychopathology than obese adults with less "Secure" attachments.

CHAPTER 2

METHODS

Participants

Obese persons seeking treatment for obesity ($N = 101$) were recruited from two facilities: Wayne State University Minimally Invasive Bariatric Surgery Program at Harper University Hospital ($n = 37$) and the Sinai-Grace Weight Management Program ($n = 64$). One participant ($n = 1$) was omitted from the study because he could not read English and participated by having the questions read to him by his son. Participants from the Wayne State University Minimally Invasive Bariatric Surgery Program were recruited from informational seminars on bariatric surgery and had yet to be evaluated for candidacy for bariatric surgery. Participants from the Sinai-Grace Weight Management Program ($n = 64$) were recruited from informational seminars on the very low calorie diet, Optifast®, ($n = 30$) or were patients currently enrolled in the very low calorie diet program ($n = 34$). The majority of the participants were women (90%, $n = 90$). A minority of participants were classified as Binge Eating Disordered (15%, $n = 15$) and Bulimia Disorder, purging type (1%, $n = 1$) as assessed by the Questionnaire on Eating and Weight Patterns-Revised (QEWP-R). African Americans comprised 62% of the sample ($n = 62$), followed by Caucasians (32%, $n = 32$), and participants of other ethnicities (5%, $n = 5$). Table 1 presents other demographic information about this sample.

Procedure

Participants were recruited by direct person-to-person solicitation when they entered the clinic to attend an informational seminar or attend a clinic appointment. Fliers and brochures were also placed in the two facilities asking for participants; however no participants inquired about the study through these means of solicitation. Eligibility requirements included: age over 21 and seeking treatment for weight loss. Participants were weighed by the researcher to calculate BMI on site with standardized scales and completed the following forms: an informed consent form, Part 1 (Experiences in Close Relationships-Revised (ECR-R) & Questionnaire on Eating and Weight Patterns-Revised (QEWP-R)) and Part 2 (Millon Clinical Multiaxial Inventory-III (MCMI-III)). Participants had the option of completing Part 1 at home or in the clinic waiting room. They were required to complete Part 2 in the waiting room due to potential psychological distress caused by completing Part 2. Two participants reported psychological distress secondary to completing Part 2 and were referred to the Wayne State Psychology Clinic for services. Ten participants completed Part 2, but did not return Part 1 and were omitted from the study. Participants were paid $20.00 after completion of Part 1 & Part 2.

Measures

Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, 1994)

Psychological distress was measured with the MCMI-III, which is a 175-item, true-false, self-administered questionnaire that assesses Axis I and Axis II disorders based on the DSM-IV (1994) classification system. This measure is a

theoretically and empirically derived measure of psychopathology with good convergent and discriminant validity. The clinical measure yields base rate (BR) scores for 14 personality disorders, 10 clinical disorders, and three modifying indices. Raw scores are translated into base rate (BR) scores, which is a standard score, used to establish anchor cut-off points to the prevalence of a particular attribute in the clinical population. BRs of 75-84 indicate characteristics of a disorder and BRs of 85 or greater suggest a disorder of clinical significance. The MCMI-III has demonstrated adequate internal consistency ranging from .66 to .90, with 20 out of 27 scales having reliability coefficients, alphas, exceeding .80. The MCMI-III is a good dimension measure of psychological disorders, which can be used to make probable diagnoses of depression (depressive, dysthymic, and major depression), borderline disorder, drug dependence, and alcohol dependence. See Table 2 for means and standard deviations of several characteristics measured. The means and standard deviations for schizotypal, paranoid, bipolar, thought disorder, and delusional disorders are also reported; however, these disorders are not examined further in the current study because attachment theory has not been used to explain the development of these disorders.

Questionnaire on Eating and Weight Patterns-Revised (QEWP-R; Spitzer, Yanovski, & Marcus, 1993)

The QEWP-R is a 28-item questionnaire that assesses BED, purging bulimia nervosa, and non-purging bulimia based on the DSM-IV (1994) classification system. The diagnosis is based on the summation of scores from

eight items: loss of control, episodic overeating, and six binge eating-associated symptoms. The scale has adequate reliability of .75 and .79 in weight control and community samples, respectively. The measure also assesses demographic information such as age, gender, ethnic background, education, height, and weight. The QEWP-R is a good measure of probable diagnoses of BED, which is based on endorsement of six items and lack of endorsement of items related to purging and non-purging bulimia symptoms. On this measure the sample reported means of 0.15 (SD = .36) on symptoms BED, 0 (SD = 0) on purging bulimia nervosa symptoms and .001 (SD = .01) on non-purging bulimia nervosa symptoms. A minority of participants were classified as BED (15%, n = 15), followed by non-purging bulimia nervosa (1%, n = 1), and no participants were classified with purging bulimia nervosa.

Experiences in Close Relationships-Revised (ECR-R; Fraley, Waller, & Brennan, 2000)

The ECR-R is a 36-item questionnaire that assesses attachment quality based on two scales, attachment-related anxiety (i.e., the extent to which people are in"Secure" vs. "Secure" about their partner's availability and responsiveness) and attachment-related avoidance (i.e., the extent to which people are uncomfortable being close to others vs. "Secure"ly depending on others). Each item is rated on a seven-point Likert Scale, ranging from 1 = *strongly agree* to 7 = *strongly disagree*. Scores are based on totally participants' responses. Combinations of high and low levels of anxiety (18 items; α = .92) and avoidance (18 items; α = 91) can be categorized into the four attachment classifications:

"Secure" (low anxiety, low avoidance), "Dismissive" (low anxiety, high avoidance), "Fearful" (high anxiety, high avoidance), and "Preoccupied" (high anxiety, low avoidance). The test-retest reliability of a subset of ECR-R items is greater than .70 for a period of eight weeks. Participants had a wide range of anxiety scores with a mean of 55.47 (SD = 25.04) and of avoidance scores with a mean of 59.10 (SD = 23.09).

CHAPTER 3

RESULTS

Analysis Plan

The variables were evaluated for normal distribution and three variables were skewed. Depressive and dysthymic symptoms were positively skewed and alcohol dependency symptoms were negatively skewed. The skewed data were subjected to a Winsor transformation according to Tabachnick & Fidell's (1996) recommendation. Analyses performed with and without this transformation were similar; therefore untransformed variables were used for ease of interpretation. Missing data on the attachment measure appeared to be random; therefore, scale totals were prorated using the participants' response pattern on the items to estimate their score for the missing data.

Pearson Product-Moment Correlations were conducted to test the hypotheses that 1) greater degrees of "Secure" attachment were correlated with less psychopathology (depressive, dysthymic, major depression, borderline, drug dependency, alcohol dependency, and binge eating) 2) greater degrees of "Secure" attachment were correlated with lower BMIs and 3) higher BMI was positively correlated with psychopathology (depressive, dysthymic, major depression, borderline, and binge eating). Pearson Product-Moment Correlations and *t*-tests were also conducted to explore the bivariate relationships of age and gender with attachment, BMI, and psychopathology.

Next, hierarchical multiple regressions were conducted to test hypotheses that attachment moderated the relationship between BMI and psychopathology.

A series of correlations were first performed between the demographic variables (age, gender, education) and the dependent variables to determine whether demographic variables should be entered as covariates (Keppel, 1982). Education was significantly related to depressive, dysthymic, and major depression symptoms, *ps* < 0.05; therefore step 1 of the hierarchical regressions for depressive, dysthymic, and major depression symptoms included education. Step 2 consisted of the main effects of BMI and attachment (anxiety and avoidance) which were centered prior to analysis, per the recommendations of Cohen (1988) and Holmbeck (2002), to reduce the effects of multicollinearity. Step 3 consisted of three 2–way interactions (BMI x Anxiety; BMI x Avoidance; Anxiety x Avoidance) and step 4 consisted of the 3-way interaction (BMI x Anxiety x Avoidance).

Correlations

As shown in Table 3, anxiety and avoidance were significantly correlated, which suggests that there is substantial overlap between these two variables. Also shown in Table 3, anxiety attachment was significantly related to depressive, major depression, borderline, and alcohol dependency symptoms. This finding supports the hypothesis that greater degrees of "Secure" attachment are correlated with less psychopathology. Contrary to my hypotheses, anxiety attachment was not significantly correlated with dysthymic, drug dependency, or binge eating symptoms, avoidance attachment was unrelated to all measured psychopathologies, and both scales of attachment were unrelated to BMI.

BMI was significantly related to depressive and borderline symptoms, which supports the hypothesis that BMI would be significantly correlated with various psychopathologies. However, BMI was unrelated to dysthymic or major depression symptoms, which was contrary to the hypotheses.

The relationship between gender and age to attachment, BMI and psychopathology was also explored. Due to the low number of participants that were male ($n = 6$), *t*-tests comparing male and females on the variables could not be properly conducted. Age was positively correlated with avoidant attachment ($r = 0.22$, $p < 0.05$), but unrelated to anxiety attachment, BMI and psychopathology.

Regressions

Multiple hierarchical regressions were conducted to test the hypotheses that the level of attachment (anxiety and avoidance) moderated the relationship between BMI and psychopathology (depressive, dysthymic, major depression, borderline, drug dependency, and alcohol dependency).

As shown in Table 4, BMI, anxiety, and avoidance accounted for an additional 4% of the variance in dysthymic symptoms after controlling for education; however these variables did not retain a significant and unique relationship with dysthymic symptoms. The 2-way interaction between these variables did not account for a significant portion of the variance in dysthymic symptoms. The 3-way interaction between BMI, anxiety, and avoidance accounted for an additional 6% of the variance, which was significant, $p < 0.01$. These findings supported the hypothesis that attachment moderated the relationship between BMI and dysthymic symptoms. Post-hoc probing was

performed to provide additional information about the nature of the 3-way interaction. Values corresponding to high and low BMI, Anxiety, and Avoidance (+1 SD and –1SD) were used to compute the expected score on dysthymic symptoms using the unstandardized regression coefficients (i.e., Bs) from the last step of the regression equation. The values used were as follows: High BMI = 11.07, Low BMI = -11.07, High Anxiety = 25.04, Low Anxiety = -25.04, High Avoidance = 23.09, Low Avoidance = -23.09. Figure 1 displays the results of these computations. "Secure" and "Fearful" have positive slopes and "Dismissive" and "Preoccupied" have negative slopes with "Preoccupied" having the steepest slope. "Preoccupied" also has the most symptoms at low BMI and the least number of symptoms at high BMI. At high BMI "Secure" and "Fearful" have the most symptoms with "Fearful" being slightly higher.

Similar analyses were conducted with other hypothesized psychopathologies (depressive, major depression, borderline, drug dependency, and alcohol dependency). As shown in Table 5, the hierarchical regression with major depression symptoms produced insignificant main effects and 2-way interactions, but produced a significant 3-way interaction. The interaction accounted for 5% of unique variance in major depressive symptoms. As shown in Table 6, the hierarchical regression for alcohol dependency produced insignificant main effects and 2-way interactions, but produced a significant 3-way interaction. This interaction accounted for 5% of unique variance in alcohol dependency. These significant 3-way interactions support the hypotheses that attachment moderates the relationship between BMI and major depression

symptoms and alcohol dependency symptoms. As with dysthymic symptoms, post-hoc probing was used to compute the expected values of the dependent variables for high and low scores on BMI, Anxiety, and Avoidance. As shown in Figure 2, similar relationships were found between the three variables in relating to major depression symptoms as were found with dysthymic symptoms. "Preoccupied" and "Dismissive" had negative slopes and "Secure" and "Fearful" had positive slopes with "Preoccupied" having the steepest slope. However, the slopes for "Dismissive" and "Fearful" were not as steep as they were for dysthymic symptoms. Again, "Preoccupied" had the greatest number of symptoms at low BMI and the least at high BMI and at high BMI "Secure" and "Fearful" had the

greatest number of symptoms with "Fearful" being slightly higher.

As shown in Figure 3, ""Secure"" and "Preoccupied" had similar slopes in alcohol dependence symptoms as they had with dysthymic and major depressive symptoms. "Fearful" had a positive slope and "Dismissive" had a negative slope, but less steep when compared to dysthymic and major depressive symptoms. Again, "Preoccupied" had the steepest slope and had the greatest number of symptoms at low BMI and the least at high BMI. ""Secure"" had the least symptoms at low BMI and the greatest at high BMI with "Fearful" only slightly less.

The hypotheses that attachment would moderate the relationship between BMI and depressive, borderline, and drug dependency symptoms were not supported. As show in Table 7, the main effects of BMI, anxiety, and avoidance,

accounted for an additional 14% of the variance in depressive symptoms after controlling for education. BMI and anxiety were uniquely correlated with depressive symptoms whereas avoidant was not (see Table 7). Also shown in Table 7, 2-way interactions between BMI, anxiety, and avoidance as well as 3-way interaction between the three variables did not produce significant results.

Similarly, the main effects of BMI, anxiety, and avoidance accounted for 9% of the variance in borderline symptoms (see Table 8); however BMI accounted for unique variance whereas anxiety and avoidance did not. The 2-way interactions between BMI, anxiety, and avoidance were not significant nor were the 3-way interaction between the three variables. As a result the hypothesis that attachment moderated the relationship between BMI and borderline symptoms was not supported.

As shown in Table 9, the main effects, 2-way interactions, and 3-way interaction were not significant. This means that these variables as well as their interactions do not account for significant variances in drug dependency symptoms. Hence, the hypothesis that attachment moderated the relationship between BMI and drug dependency symptoms was not supported.

Due to the overlap of symptoms between the dependent variables of interest in this study (depressive, dysthymic, major depression, borderline, drug dependency, alcohol dependency, and binge eating) and the symptoms of anxiety disorder, somatoform disorder, and post-traumatic stress disorder, 3 additional hierarchical regressions were conducted to explore the relationship of attachment and BMI to these disorders. The correlations between the dependent

variables and the demographic variables (age, sex, and education) were insignificant and therefore no covariates were entered into these equations. As shown in Tables 10-12, the main effects, 2-way interactions, and the 3-way interactions of BMI, anxiety, and avoidance, did not account for significant variance in anxiety symptoms, somatoform symptoms, or post-traumatic symptoms.

CHAPTER 3

DISCUSSION

Purpose

The aim of the current study was to examine the relationships between attachment, BMI, and psychopathology. Correlations showed that anxiety attachment was positively associated with psychopathological symptoms, while avoidant attachment was not. Specifically, anxiety attachment was positively associated with depressive, major depressive, and borderline. These findings support the hypothesis that anxiety attachment is associated with psychopathology and several studies have found similar relationships (Brennan & Shaver, 1995; Sansone, Sansone, & Wiederman, 1996). An unexpected finding of a positive correlation between anxiety attachment and alcohol dependency symptoms was found in this study. This finding contradicts previous studies associating drug and alcohol dependency symptoms with avoidant attachment, not anxiety attachment (Tanofsky, Wilfley, Spurrell, Welch & Brownell, 1997). Perhaps this highly anxious obese sample attempted to alter negative moods by consuming alcohol, while the highly avoidant obese sample did not experience emotional distress therefore did not use substances to alter moods. Such interpretation is further supported by the insignificant correlations between avoidant attachment and other measured psychopathologies. Surprisingly, binge eating was not associated with either anxiety attachment or avoidance attachment. Binge eating symptoms do not currently qualify as a DSM-IV disorder; perhaps they are a symptom of other disorders, rather than a disorder

in itself. The symptoms of BED have similar qualities as the mood disorders (overeating, sadness, and guilt) and BPD (impulsivity, interpersonal instability, and dissociations); therefore binge eating could be a symptom of a mood or personality disorder and not a disorder in itself.

Correlations also showed that BMI was not associated with anxiety or avoidance attachment. In other words, the variability of BMI in this sample did not appear to be related to how one regulates negative affect on separate scales. BMI was associated with depressive and borderline symptoms, which has been supported by numerous studies (Brennan & Shaver, 1995 Sansone, Sansone, & Wiederman, 1996). While bi-variate correlation analysis reveal valuable information as to how attachment, BMI, and psychopathology relate to one another, moderator analysis revealed a more complex relationship between these three variables.

Moderator analyses revealed that attachment (i.e., anxiety and avoidance) was related to psychopathology depending on the level of BMI. Persons with high BMIs may experience more prejudices and discriminations than persons with low BMIs, but the effect on psychological well-being may be dependent on attachment style. For participants with "Secure" attachments (i.e., low anxiety and low avoidance), dysthymic, major depressive, and alcohol dependence symptoms were greater for those with higher BMIs than those with lower BMIs. BMI is associated with increased levels of psychopathology (Friedman & Brownell, 1995; Stunkard & Wadden, 1992; Wadden & Stunkard, 1985) and coupled with the "Secure" participants' ability to acknowledge distress (Brennan,

Clark, & Shaver, 1998; Mikulincer & Florian, 1998; Pereg & Mikulincer, 2004), it is reasonable to propose that higher BMI participants might experience greater distress. However, it is important to note that the distress levels were below clinical significance (i.e., *BR* < 75). "Secure" participants are able to cope with their distress by using adaptive coping mechanisms (Brennan, Clark, & Shaver, 1998; Mikulincer & Florian, 1998; Pereg & Mikulincer, 2004). This was supported because "Secure" participants had lower levels of psychological distress compared to "Insecure" participants ("Dismissive", "Preoccupied", and "Fearful") at low BMIs.

For participants with "Fearful" attachments (i.e., high anxiety and high avoidance), dysthymic symptoms were greater for high BMI participants than low BMI participants, while major depression and alcohol dependency were only slightly higher. Similar to "Secure" participants, "Fearful" participants may be able to acknowledge negative thoughts (Brennan, Clark, & Shaver, 1998; Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). Unlike "Secure" participants, they may not be able to use adaptive coping strategies, such as turn to others for support, to decrease their psychological distress. Rather, they might attempt to avoid the source of distress (Brennan, Clark, & Shaver, 1998; Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). Therefore, "Fearfully" participants and "Secure" participants had similar trend lines, but "Fearful" participants had greater psychological distress than "Secure" participants independent of level of BMI. Interestingly, "Secure" and "Fearful" participants had similar levels of alcohol dependence symptoms at high BMI, but

dissimilar at low BMI. This suggests that the differences in BMI for the "Fearful" participants are less associated with greater levels of alcohol dependency symptoms than for "Secure" participants. Perhaps the "Fearful" participants' consumption of food is one maladaptive coping mechanism that stabilizes their alcohol dependency symptoms.

For participants with "Dismissive" attachments (i.e., low anxiety and high avoidance), dysthymic and major depressive symptoms were significantly lower for high BMI versus low BMI; however alcohol dependency symptoms were relatively stable across BMIs. "Dismissive" participants might have the ability to suppress negative thoughts and use defense mechanisms to regulate their emotions (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). This may be evidenced by their moderate levels of distress in the low BMI group, which is in between "Secure" and "Preoccupied" groups. When low BMI and high BMI groups are compared, it is possible that consumption of food may decrease levels of psychological distress. This is likely to occur because "Dismissive" persons minimize the importance of interpersonal relationships (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004) and when confronted with psychological distress they may regulate emotions by turning to an object (e.g., food) to reduce symptoms. This interpretation is consistent with the hypothesized tendency of "Dismissive" persons to value self-reliance, or handling negative emotions in a non-emotion focused way (Shaver, Collins, & Clark, 1996). .

For participants with "Preoccupied" attachments (i.e., high anxiety and low avoidance), dysthymic, major depression, and alcohol dependency symptoms were significantly lower for high BMI participants than low BMI participants. "Preoccupied" participants may have an inability to regulate their emotions (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004), as evidenced by their clinically significant psychological symptoms in the low BMI groups. When comparing low BMI to high BMI "Preoccupied" participants, high BMI experienced less distress. This group might use food to decrease psychological distress. This is likely to occur because "Preoccupied" persons become hyper-vigilant to their emotional distress and use maladaptive coping strategies (e.g., binging) to decrease negative emotions (Brennan, Clark, & Shaver, 1998, Mikulincer, Shaver, & Pereg, 2002; Pereg & Mikulincer, 2004). This study revealed that obese individuals seeking treatment for weight loss vary in psychological symptoms based on BMI and attachment levels. Specifically, "Secure" and "Fearful" participants at high BMIs are more distressed than "Secure" and "Fearful" participants at low BMIs and "Dismissive" and "Preoccupied" participants at high BMIs are less distressed than "Dismissive" and "Preoccupied" participants at low BMIs. Thus, it is possible that increases in BMI is associated in either increased symptoms or decreased symptoms, respectively, thus food consumption is related to affect regulation.

Implications and Future Directions for Research

Within the treatment-seeking obese population, there are several sub-populations, including those who are psychologically distressed at low and high

BMI levels and those who are not distressed at low and high BMI levels. In this study, a complex relationship was found between BMI, attachment, and certain types of psychopathology. However, this study is cross-sectional. Therefore, it cannot be concluded that changes in BMI or attachment cause changes in psychological distress. It is also possible that changes in psychopathology result in changes in BMI. For instance, greater dysthymic, major depressive, and alcohol dependency symptoms in the "Preoccupied" and "Dismissive" groups may result in an inability or lack of motivation to eat. Alternatively, greater dysthymic, major depressive, and alcohol dependency symptoms in the ""Secure"" and "Fearful" groups may result in overeating. These are possible conclusions because various mood disorders such as dysthymic disorder and major depressive disorder are related to changes in appetite. Specifically, according to the DSM-IV (1994) persons with such disorders are likely to have significant weight loss or gain. In addition, alcohol dependency is co-morbid with mood disorders (Adams & Sutker, 2001) and therefore may share same of the same symptoms such as appetite changes (DSM-IV, 1994). However, anecdotal reports by participants when talking with the principal investigator of the current study suggest that eating temporarily decreases negative feelings. Future research is need to examine the longitudinal effects of changes in BMI to further support the notion that some individuals use food to regulate their emotions to a greater degree than others. It is also possible that changes in attachment co-vary with changes in BMI and distress. Researchers have found that individuals who change from ""Secure"" to "Insecure" attachment are characterized by more

severe life events, while those who change from "Insecure" to "Secure" are associated with having a positive interpersonal relationship (Feeney & Noller, 1996). Thus, changes in attachment are related to distress levels and perhaps changes in BMI. In addition, future research should examine the efficacy of weight loss programs dependent on attachment level.

The findings from this study have assessment and treatment implications for this population. As a result of this study, treatment programs for the clinically obese might be encouraged to evaluate a participant's ability to regulate negative affect. Should it be determined that a participant has difficulty regulating negative affect, then treatment programs could incorporate interpersonal psychotherapy and cognitive therapy to help them cope with negative affect and use adaptive coping strategies that decrease psychological distress. This would likely result in less dependency on food to regulate emotions and increase in the likelihood that obese treatment seekers lose weight. Future research should examine the efficacy of incorporating psychotherapy into treatment programs for those participants that are unable to regulate their affect.

Limitations and Strengths

Although support was found for some of the hypotheses in this study, the findings should be interpreted with the following limitations in mind. This study had a small number of male participants; therefore the findings cannot be generalized to males. Research has demonstrated that men are more likely to be categorized with "Dismissive" attachments than women and express differing types of psychopathology. For example, women are more likely to have mood

disorders and men are more likely to have substance abuse disorders (Brennan & Shaver, 1995; Sansone, Sansone, & Wiederman, 1996). Perhaps "Dismissive" males react to psychological distress differently than "Dismissive" females and perhaps they also react to increases in BMI differently. Research has shown that social stigmas about weight are stronger and more variable for females than males (Crossrow, Jeffrery, & McGuire, 2001), so perhaps level of distress independent of attachment style would also be different.

Another limitation of this study is that participants were evaluated at different times during their treatment for weight loss. Some participants were entering the program, while others had been in the program for several weeks. It could be that beginning in a weight loss program or being somewhere in the process of treatment could result in different emotional states. For example it could be that those entering the program had more psychological symptoms of distress because their felt they needed treatment to lose weight, or that they felt hopeful that the treatment program was going to help them lose weight. It also could be that participants who had been in the program felt less psychologically distressed because they were losing weight or that they were feeling more distressed because this program was not working for them.

The present research study gives credence to the anecdotal and clinical reports that some obese individuals use food to regulate their emotions. In addition, it validates previous studies because it supports the data that "Secure" individuals have lower levels of psychological distress than "Insecure" individuals (Feeney & Noller, 1996; Cole-Detke & Kobak, 1996; Fonagy et al 1996), but only

at low BMIs. In addition, it supports previous research that has found that "Insecure" individuals are more likely to have psychological distress and cope with their distress in maladaptive ways (Shaver, Collins, & Clark, 1996), in this case using food to decrease, minimize, or stabilize psychological distress. The present study also emphasizes the finding that some in treatment programs for weight loss are experiencing significant psychological distress that needs to be treated. Furthermore, it highlights the need for weight loss programs to consider psychological interventions in conjunction to other interventions to help those who want to lose weight achieve their goals.

APPENDIX A

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WAYNE STATE UNIVERSITY

ID Number

The Support Study:
Studying and Understanding People with Obesity who Request Treatment

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The Experiences in Close Relationships-Revised

Please indicate below the approximate extent of disagreement or agreement for each statement below by filling in the bubble for the appropriate response.

	strongly disagree			neither agree or disagree			strongly agree
1. I'm afraid that I will lose my partner's love	O	O	O	O	O	O	O
2. I prefer not to show a partner how I feel deep down	O	O	O	O	O	O	O
3. I often worry that my partner will not want to stay with me	O	O	O	O	O	O	O
4. I feel comfortable sharing my private thoughts and feelings with my partner	O	O	O	O	O	O	O
5. I often worry that my partner doesn't really love me	O	O	O	O	O	O	O
6. I find it difficult to allow myself to depend on romantic partners	O	O	O	O	O	O	O
7. I worry that romantic partners won't care about me as much as I care about	O	O	O	O	O	O	O
8. I am very comfortable being close to romantic partners	O	O	O	O	O	O	O
9. I often wish that my partner's feelings for me were as strong as my feelings for him/her	O	O	O	O	O	O	O
10. I don't feel comfortable opening up to romantic partners	O	O	O	O	O	O	O
11. I worry a lot about my relationships	O	O	O	O	O	O	O
12. I prefer not to be too close to romantic partners	O	O	O	O	O	O	O
13. When my partner is out of sight, I worry that he or she might become interested in someone else	O	O	O	O	O	O	O
14. I get uncomfortable when a romantic partner wants to be very close	O	O	O	O	O	O	O

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The Experiences in Close Relationships-Revised

	strongly disagree			neither agree or disagree			strongly agree
15. When I show my feelings for romantic partners, I 'm afraid they will not feel the same about me	O	O	O	O	O	O	O
16. I find it relatively easy to get close to my partner	O	O	O	O	O	O	O
17. I rarely worry about my partner leaving me	O	O	O	O	O	O	O
18. It's not difficult for me to get close to my partner	O	O	O	O	O	O	O
19. My romantic partner makes me doubt myself	O	O	O	O	O	O	O
20. I usually discuss my problems and concerns with my partner	O	O	O	O	O	O	O
21. I do not often worry about being abandoned	O	O	O	O	O	O	O
22. It helps to turn to my romantic partner in times of need	O	O	O	O	O	O	O
23. I find that my partner(s) don't want to get as close as I would like	O	O	O	O	O	O	O
24. I tell my partner just about everything	O	O	O	O	O	O	O
25. Sometimes romantic partners change their feelings about me for no apparent reason	O	O	O	O	O	O	O
26. I talk things over with my partner	O	O	O	O	O	O	O
27. My desire to be very close sometimes scares people away	O	O	O	O	O	O	O
28. I am nervous when partners get too close to me	O	O	O	O	O	O	O

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The Experiences in Close Relationships-Revised

	strongly disagree			neither agree or disagree			strongly agree
29. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am	O	O	O	O	O	O	O
30. I feel comfortable depending on romantic partners	O	O	O	O	O	O	O
31. It makes me mad what I don't get the affection and support I need from my partner	O	O	O	O	O	O	O
32. I find it easy to depend on romantic partners	O	O	O	O	O	O	O
33. I worry that I don't measure up to other people	O	O	O	O	O	O	O
34. It's easy for me to be affectionate with my partner	O	O	O	O	O	O	O
35. My partner only seems to notice me when I'm angry	O	O	O	O	O	O	O
36. My partner really understands me and my needs	O	O	O	O	O	O	O

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Questionnaire on Eating and Weight Patterns-Revised

Please fill all boxes and fill in all bubbles as they apply to you

1 Age ☐☐

2. Sex O Male O Female

3. What is your ethnic/racial background?

O Black (not Hispanic)
O Hispanic
O White (not Hispanic)
O Asian
O Other

4. How far did you get in school?

O Grammar school, junior high or less
O Some high school
O High school graduate or equivalency (GED)
O Some college or associate degree
O Completed college

5. How tall are you in feet/inches?

☐☐

6. How much do you weigh now in pounds?

☐☐☐

7. What has been your highest weight ever (when not pregnant?

☐☐☐

8. Have you ever been overweight by at least 10lbs as a child or 15 lbs as an adult (when not pregnant?

O yes O no

8b. IF YES: How old were you when you were first overweight (at least 10lbs as a child or 15lbs as an adult?) If you are not sure, what is your best guess?

☐☐

9. How many times (approximately have you lost 20lbs or more–when you weren't sick–and then gained it back?

O Never
O Once or twice
O Three or four times
O Five times or more

10. During the past SIX months, did you often eat within any tow hour period what most people would regard as an unusually large amount of food?

O yes O no

IF NO: SKIP TO QUESTION 15

11. During the times when you age this way, did you often feel you couldn't stop eating or control what or how much you were eating?

O yes O no

IF NO: SKIP TO QUESTION 15

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Questionnaire on Eating and Weight Patterns-Revised

12. During the <u>past six months</u>, how often, on average did you have times when you are this way–that is, large amounts of food PLUS the feeling that your eating was out of control? (There may be been some weeks when it was not present–just average those in).

- O Less than one day a week
- O One day a week
- O Two or three days a week
- O Four or five days a week
- O Nearly every day

13. Did you <u>USUALLY</u> have any of the following experiences during these occasions?

	Yes	No
Eating much more rapidly than usual?	O	O
Eating until you felt uncomfortably full?	O	O
Eating large amounts of food when you didn't feel physically hungry?	O	O
Eating alone because you were embarrassed by how much you were eating?	O	O
Feeling disgusted with yourself, depressed, or feeling very guilty after overeating?	O	O

14.a Think about a typical time when you are this way–that is, large amounts of food plus the feeling that your eating was out of control. What time of day did the episode start?

- O Morning (8AM to 12 Noon)
- O Early afternoon (12 Noon to 4 PM)
- O Late Afternoon (4PM to 7 PM)
- O Evening (7PM to 10PM)
- O Night (After 10 PM)

14. b Approximately how long did this episode of eating last, from the time you started to eat to when you stopped and didn't eat again for at least 2 hours?

Hours ☐☐ Minutes ☐☐

14c. As best as you can remember, please list everything you might have eaten or drunk during that episode. If you ate for more than two hours, describe the foods eaten and liquids drunk during the two hours that you ate the most. Be specific- include brand names where possible, and amounts as best you can estimate. (For example: 7 ounces Ruffles potato chips; 1 cup Breyer's chocolate ice cream with 2 teaspoons hot fudge; 2 8-ounce glasses of Coca-cola; 1 & 1/2 ham cheese sandwiches with mustard.

14d. At the time this episode started, how long had it been since you had previously finished eating a meal or snack?

Hours ☐☐ Minutes ☐☐

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Questionnaire on Eating and Weight Patterns-Revised

15. In general, during the past SIX months, how upset were you by overeating (eating more than you think is best for you)?

O Not at all
O Slightly
O Moderately
O Greatly
O Extremely

16. In general, during the past SIX months, how upset were you by the feelings that you couldn't stop eating or control what or how much you were eating?

O Not at all
O Slightly
O Moderately
O Greatly
O Extremely

17 During the past SIX months, how important has your weight or shape been in how you feel about or evaluate yourself as a person--as compared to other aspects of your life, such as how you do at work, as a parent, or how you get along with other people? Weight and shape were _____ in how you felt about yourself.

O NOT very important
O played a part
O were among the main things
O were the MOST important things

18a During the past THREE months, did you ever make yourself vomit in order to avoid gaining weight after binge eating?

O Yes O No

18b. IF YES: How often, ON AVERAGE, was that ?

O Less than once a week
O Once a week
O Two ore three times a week
O Four or five times a week
O More than five times a week

19. During the past THREE months, did you ever take more than twice the recommended dose of laxatives in order to avoid gaining weight after binge eating?

O Yes O No

19b. IF YES How often ON AVERAGE was that?

O Less than once a week
O Once a week
O Two ore three times a week
O Four or five times a week
O More than five times a week

20a. During the past THREE months did you ever take more than twice the recommended dose of diuretics (water pills) in order to avoid gaining weight after binge eating?

O Yes O No

20b. IF YES: How often, ON AVERAGE, was that?

O Less than once a week
O Once a week
O Two or three times a week
O Four or five times a week
O More than five times a week

21a. During the past THREE months did you ever fast-- not eat anything at all for at least 24 hours- in order to avoid gaining weight after binge eating?

O Yes O No

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Questionnaire on Eating and Weight Patterns-Revised

21b. IF YES: How often, ON AVERAGE, was that?

O Less than one day a week
O One day a week
O Two or three days a week
O Four or five days a week
O More than five times a week

22a. During the past THREE months, did you ever exercise for more than an hour SPECIFICALLY in order to avoid dining weight after a binge?

O Yes O No

22b. IF YES: How often ON AVERAGE was that?

O Less than once a week
O Once a week
O Two ore three times a week
O Four or five times a week
O More than five times a week

23a. During the past THREE months, did you ever take MO than twice the recommended does of a diet pill in order to avoid gaining weight after binge eating?

O Yes O No

23b. IF YES: How often ON AVERAGE was that?

O Less than once a week
O Once a week
O Two ore three times a week
O Four or five times a week
O More than five times a week

24a. During the past SIX months, did you go to any meetings of an organized weight control program? (e.g. Weight Watchers, Optifast, Nutrisystem) or a self-help group (e.g., TOPS, Overeaters Anonymous)?

O Yes O No

24b. IF YES: Name of Program

25. Since you have been an adult-18 years old- how much of the time have you been on a dies, being trying to follow dies, or in some way been limiting how much you were eating in order to lose weight or keep from regaining weight you had lost? Would you say...?

O None or hardly any of the time
O About a quarter of the time
O About half the time
O About three-quarters of the time
O Nearly all the time

26. SKIP THIS QUESTION IF YOU NEVER LOST AT LEAST 10 LBS BY DIETING: How old were you the first time you lost at least 10 lbs by dieting, or in some way limiting how much you are? If you are not sure , what is your best guess?

years

27. SKIP THIS QUESTION IF YOU'VE NEVER HAD EPISODES OF EATING UNUSUALLY LARGE AMOUNTS OF FOOD ALONG WITH THE SENSE OF LOSS OF CONTROL: How old were you when you first had times when you ate large amounts of food and felt that your eating was out of control? If you are not sure, what is you best, guess?

years

PLEASE ANSWER THE FOLLOWING 2 QUESTIONS

Has your weight problem affected your relationship with your partner or past partners? If so how?

What do you think is the cause of your overweight or obesity problem?

APPENDIX B

Table 1
Demographic characterizes of the sample

Variable	*M*	*SD*
Age	42.29	11.43
	%	*n*
*Education**		
Grammar school, junior high or less	0	0
Some high school	1	1
High school graduate or equivalency (GED)	25	25
Some College or associate degree	46	46
Completed College	27	27
*BMI Classification**		
Underweight (BMI < 18.5)	0	0
Normal Weight (BMI = 18.6-24.9)	1	1
Overweight (BMI = 25-29.9)	4	4
Obesity (BMI = 30+)	94	94

N = 100
**N* = 99; percentages do not sum to 100% because 1 participant omitted that question

Table 2
MCMI-III characterizes of the sample

Variable	*M*	*SD*
Modifying Indices		
Disclosure	49.87	21.43
Desirability	68.00	17 37
Debasement	50.39	22.81
Severe Personality Pathology		
Schizotypal	37.05	28.89
Borderline	34.08	28.42
Paranoid	47.24	29.57
Clinical Syndromes		
Anxiety Disorder	42.60	32.47
Somatoform Disorder	41.96	26.52
Bipolar: Manic Disorder	49.10	21.60
Dysthymic Disorder	31.28	27.37
Alcohol Dependence	44.66	24.58
Drug Dependence	42.19	23.67
Post-Traumatic Stress	29.72	26.18
Severe Clinical Syndromes		
Thought Disorder	33.41	24.36
Major Depression	37.09	25.16
Delusional Disorder	40.39	29.01

N = 100

Table 3
Correlations between anxiety attachment, avoidance attachment, BMI, and psychopathology

		1	2	3	4	5	6	7	8	9
1.	Anxiety									
2	Avoidance	0.65**								
3	BMI	0.05	0.12							
4	Depressive	0.30**	0.15	0.24*						
5	Dysthymic	0.19	0.12	0.12	0.77**					
6	Major Dep.	0.20*	0.16	0.15	0.64**	0.83**				
7	Borderline	0.22*	0.11	0.21*	0.81**	0.72**	0.61**			
8	Drug Dep.	-0.05	-0.13	0.11	0.26**	0.29**	0.50**	0.50**		
9	Alcohol Dep.	0.21*	0.14	0.17	0.31**	0.32**	0.54**	0.54**	0.49**	
10	Binge Eating	0.16	0.19	0.00	0.10	0.07	0.03	0.07	0.02	-0.01

$N = 100$; $^{*}p < 0.05$; $^{**}p < 0.01$

Table 4
Hierarchical regression: dysthymic symptoms

	B	SE	Beta	t
Step 1				
Education	-12.55	6.15	-0.20	-2.04*
	$F(1,96) = 4.17$, $R^2 = 0.04$			
Step 2				
BMI	0.22	0.25	0.09	0.88
Anxiety	0.22	0.14	0.20	1.55
Avoidance	-0.05	0.15	-0.04	-0.29
	F change (4,93) = 1.40, $\Delta R^2 = 0.04$, $R^2 = 0.08$			
Step 3				
BMI x Anxiety	0.00	0.02	-0.01	-0.08
BMI x Avoidance	0.01	0.02	0.04	0.30
Anxiety x Avoidance	0.00	0.01	0.01	0.05
	F change (7,90) = 0.04, $\Delta R^2 = 0.00$, $R^2 = 0.08$			
Step 4				
BMI x Anxiety x Avoidance	0.00	0.00	0.31	2.56**
	F change (8,89) = 6.56, $\Delta R^2 = 0.06$**, $R^2 = 0.15$			

*$p < 0.05$; **$p < 0.01$

Table 5
Hierarchical regression: major depression symptoms

	B	SE	Beta	t
Step 1				
Education	-9.32	5.68	-0.17	-1.64
	$F(1,96) = 2.69$, $R^2 = 0.03$			
Step 2				
BMI	0.25	0.23	0.11	1.12
Anxiety	0.17	0.13	0.18	1.34
Avoidance	0.02	0.14	0.01	0.10
	F change (4,93) = 1.66			
	ΔR^2=0.05, R^2= 0.08			
Step 3				
BMI x Anxiety	0.00	0.02	-0.03	-0.20
BMI x Avoidance	0.00	0.02	-0.04	-0.33
Anxiety x Avoidance	0.00	0.00	-0.04	-0.41
	F change (7,90) = 0.21,			
	ΔR^2= 0.01, R^2= 0.08			
Step 4				
BMI x Anxiety x Avoidance	0.00	0.00	0.27	2.18*
	F change (8,89) = 4.73			
	ΔR^2= 0.05*, R^2= 0.13			

*$p < 0.05$

Table 6
Hierarchical regression: alcohol dependence symptoms

	B	SE	Beta	t
Step 1				
BMI	0.35	0.22	0.16	1.58
Anxiety	0.19	0.13	0.20	1.48
Avoidance	0.00	0.14	0.00	-0.06
	$F(3,95) = 2.16$, $R^2 = 0.06$			
Step 2				
BMI x Anxiety	0.00	0.02	-0.12	-0.89
BMI x Avoidance	0 00	0.02	-0.03	-0.21
Anxiety x Avoidance	0.00	0.00	-0.02	-0.21
	F change (6,92) = 0.69, $\Delta R^2 = 0.02$, $R^2 = 0.08$			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0.27	2.22*
	F change (7,91) = 4.95 $\Delta R^2 = 0.05$*, $R^2 = 0.13$			

*$p < 0.05$

Table 7
Hierarchical regression: depressive symptoms

	B	SE	Beta	t
Step 1				
Education	-17.62	6.53	-0.27	-2.70**
	$F(1,96) = 7.28$, $R^2 = 0.07$**			
Step 2				
BMI	0.55	0.25	0.21	2.24*
Anxiety	0.45	0.14	0.39	3.16**
Avoidance	-0.18	0.15	-0.14	-1.17
	F change $(4,93) = 5.51$,			
	$\Delta R^2 = 0.14$**, $R^2 = 0.21$			
Step 3				
BMI x Anxiety	0.00	0.02	-0.02	-0.19
BMI x Avoidance	0.00	0.02	0.01	0.12
Anxiety x Avoidance	0.00	0.01	-0.08	-0.79
	F change $(7,90) = 0.25$,			
	$\Delta R^2 = 0.01$, $R^2 = 0.22$			
Step 4				
BMI x Anxiety x Avoidance	0.00	0.00	0.21	1.82
	F change $(8,89) = 3.30$			
	$\Delta R^2 = 0.03$, $R^2 = 0.25$			

*$p < 0.05$; **$p < 0.01$

Table 8
Hierarchical regression: borderline symptoms

	B	SE	Beta	t
Step 1				
BMI	0.53	0.25	0.21	2.10*
Anxiety	0.29	0.15	0.25	1.96
Avoidance	-0.10	0.16	-0.08	-0 63
	F (3,95) = 3.07, R^2 = 0.09*			
Step 2				
BMI x Anxiety	-0.01	0.02	-0.06	-0.44
BMI x Avoidance	0.01	0.02	0.05	0.39
Anxiety x Avoidance	-0.01	0.01	-0.11	-1.09
	F change (6,92) = 0.55, ΔR^2= 0.02, R^2 = 0.10			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0 17	1.40
	F change (7,91) = 1.95, ΔR^2= 0.02, R^2= 0.12			

*$p < 0.05$

Table 9
Hierarchical regression: drug dependency symptoms

	B	SE	Beta	t
Step 1				
BMI	0.26	0.22	0.12	1.21
Anxiety	0.05	0.13	0.06	0.43
Avoidance	-0.19	0.14	-0.18	-1.35
	$F(3,95) = 1.10$, $R^2 = 0.03$			
Step 2				
BMI x Anxiety	0.00	0.01	-0.01	-0.09
BMI x Avoidance	0.00	0.02	-0.02	-0.14
Anxiety x Avoidance	0.00	0.00	0.11	1.00
	F change (69,92) = 0.04, $\Delta R^2 = 0.01$, $R^2 = 0.04$			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0.06	0.49
	F change (7,91) = 0.24, $\Delta R^2 = 0.00$, $R^2 = 0.05$			

Table 10
Hierarchical regression: anxiety symptoms

	B	SE	Beta	t
Step 1				
BMI	0.08	0.29	0.03	0.27
Anxiety	0.26	0.17	0.20	1.52
Avoidance	0.05	0.19	0.03	0.26
	$F(3,95) = 1.73$, $R^2 = 0.05$			
Step 2				
BMI x Anxiety	-0.03	0.02	-0.23	-1.73
BMI x Avoidance	0.02	0.02	0.10	0.78
Anxiety x Avoidance	0.00	0.01	-0.05	-0.44
	F change (6,92) = 1.30, $\Delta R^2 = 0.04$, $R^2 = 0.09$			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0.19	1.58
	F change (7,91) = 2.51 $\Delta R^2 = 0.02$, $R^2 = 0.12$			

Table 11
Hierarchical regression: somatoform symptoms

	B	SE	Beta	t
Step 1				
BMI	0.23	0.24	0.10	0.96
Anxiety	0.10	0.14	0.10	0.74
Avoidance	0.01	0.15	0.09	0.64
	$F(3,95) = 1.34$, $R^2 = 0.04$			
Step 2				
BMI x Anxiety	0.00	0.02	-0.02	-0.18
BMI x Avoidance	0.00	0.02	-0.08	-0.59
Anxiety x Avoidance	0.00	0.01	-0.06	-0.59
	F change (6,92) = 0.45, $\Delta R^2 = 0.01$, $R^2 = 0.05$			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0.22	1.79
	F change (7,91) = 3.21 $\Delta R^2 = 0.03$, $R^2 = 0.09$			

Table 12
Hierarchical regression. post-traumatic symptoms

	B	SE	Beta	t
Step 1				
BMI	0.22	0.24	0.09	0.92
Anxiety	0.21	0.14	0.20	1.52
Avoidance	0.00	0.15	0.00	0.03
	$F(3,95) = 1.74$, $R^2 = 0.05$			
Step 2				
BMI x Anxiety	-0.02	0.02	-0.14	-1.01
BMI x Avoidance	0.02	0.02	0.13	0.94
Anxiety x Avoidance	0.00	0.01	-0.17	-1.58
	F change (6,92) = 1.47, $\Delta R^2 = 0.04$, $R^2 = 0.10$			
Step 3				
BMI x Anxiety x Avoidance	0.00	0.00	0.17	1.36
	F change (7,91) = 1.84 $\Delta R^2 = 0.02$, $R^2 = 0.11$			

APPENDIX C

Figure 1
Three-Way interaction between anxiety attachment, avoidance attachment, and BMI on dysthymic symptoms

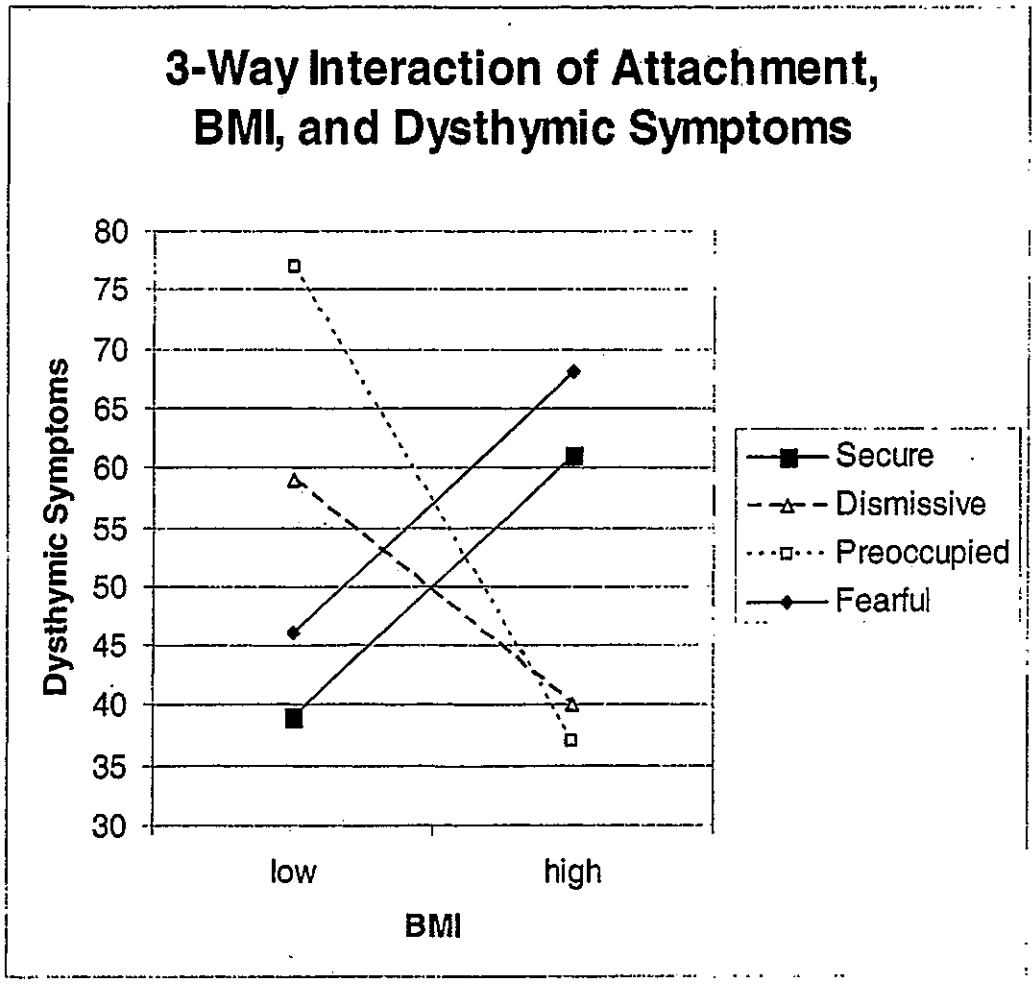


Figure 2
Three-Way interaction between anxiety attachment, avoidance attachment, and BMI on major depression symptoms

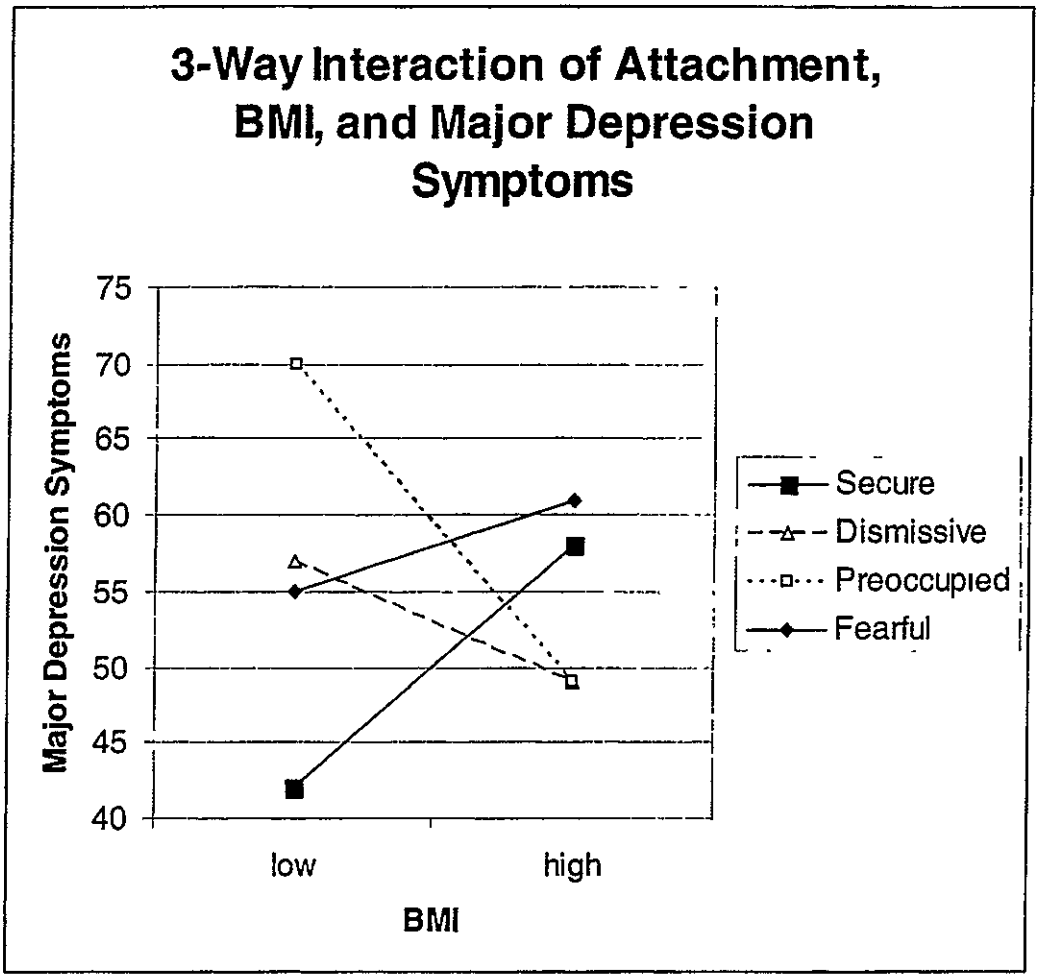
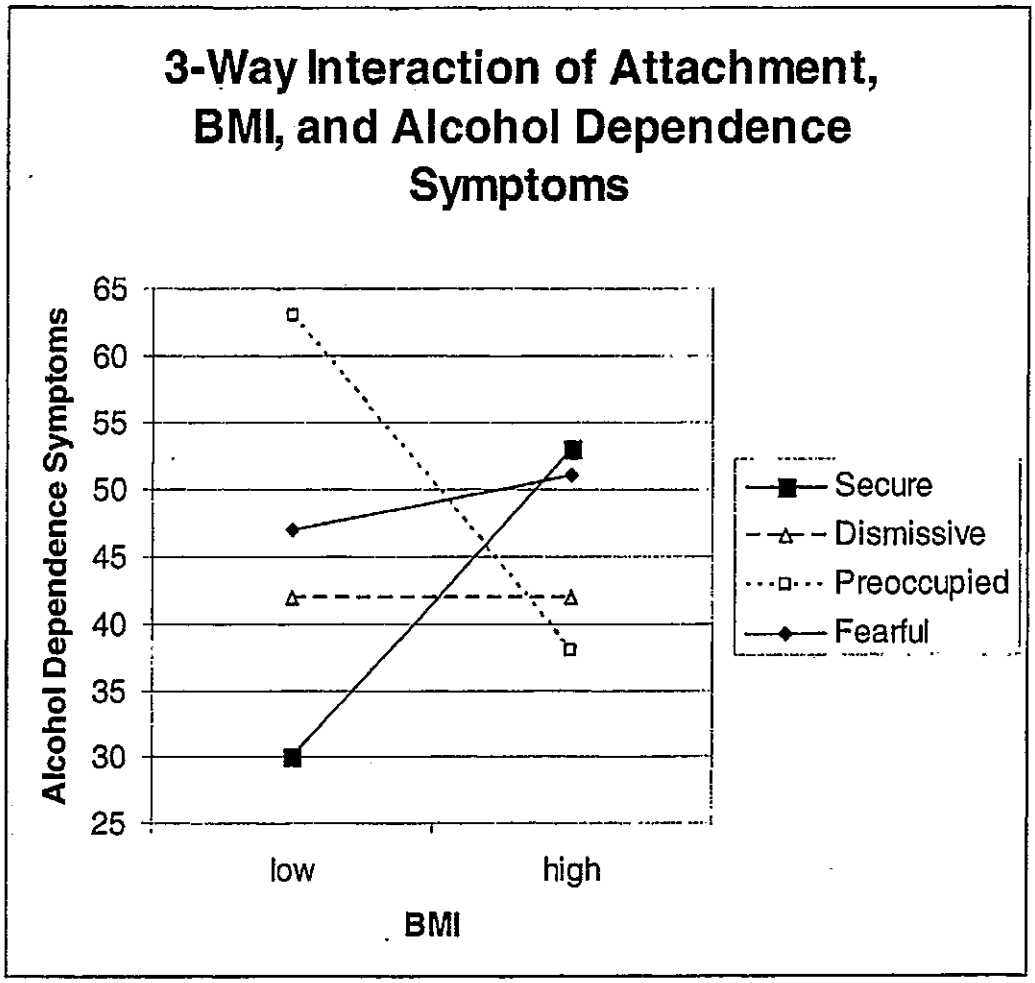


Figure 3
Three-Way interaction between anxiety attachment, avoidance attachment, and BMI on alcohol dependence symptoms



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ABSTRACT

THE ROLE OF ATTACHMENT TO OBESITY AND PSYCHOPATHOLOGY

by

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Obesity and overweight have reached epidemic proportions in the United States (WHO, 1988). Despite the various treatment programs, the problem is getting worse, more people are becoming obese, and it is estimated that 90-95% of those who lose weight will regain it (Legro, 2000). Current treatment programs fail to take into consideration emotional variability within this population. The purpose of the present study was to examine the relationships between attachment, BMI, and psychopathology. Obese participants (N = 101) seeking treatment for weight loss completed 3 questionnaires: 1) Experiences in Close Relationships-Revised, 2) Millon Clinical Multiaxial Inventory-III, and 3) Questionnaire on Eating and Weight Patterns-Revised. Results indicated that attachment moderated the relationship between BMI and dysthymic symptoms, major depressive symptoms, and alcohol dependency symptoms. "Secure"ly and "Fearful"ly attached participants at high BMI were generally more distressed than "Secure"ly and "Fearful"ly attached participants at low BMI. However,

avoidant and "Preoccupied" participants at high BMI were generally less distressed than avoidant and "Preoccupied" participants at low BMI. Such findings suggest that increases in BMI are associated with distress or lack of distress dependent on attachment classification. Assessment and treatment implications are elaborated.

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